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Richard M. Hawes

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EXAMINER

CHRISTENSEN, SCOTT B

ART UNIT

PAPER NUMBER

2444

NOTIFICATION DATE

DELIVERY MODE

02/02/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/803,230	Applicant(s) HAWES, RICHARD M.	
	Examiner Scott Christensen	Art Unit 2444	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in regards to the most recent papers filed on 10/19/2009.

Response to Arguments

2. Applicant's arguments with respect to claims 31-49 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 31, 34, 36-38, 40-42, and 46-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. in US 7,287,180, hereafter referred to as "Chen."
5. With regard to claim 31, Chen discloses one or more computer-readable memory devices comprising computer-executable instructions that, when executed, synchronizes a system including a server farm comprising plural application server modules, the synchronizing comprising:

receiving notification information at a first application server module of the server farm regarding a change in the system (Chen: Column 22, lines 6-24. The heartbeat

Art Unit: 2444

includes status information, where the status information would constitute either no change in the status, or a change in the status. The fact that notifications are being transmitted demonstrates that the status is not static, and thus does provide notification of changes.);

acting on the notification information in the first application server module (Chen: Column 22, lines 6-24. There is no requirement as to what constitutes acting on the notification information. Merely receiving the notification and preparing to propagate the notification constitutes an act by the first application server module.); and

propagating the notification information from the first application server module to at least a second application server module, wherein both the first application server module and the second application server module are located on a same tier (Chen: Column 22, lines 6-24. The received notification has the server's own notification appended to it, where the notification is then forwarded to the next adjacent member node.),

wherein the notification information comprises an indication of whether or not at least one application used by the system is available to service requests (Chen: Column 22, lines 6-24. The notification information includes status information, which includes whether the server is online or offline. The language here does not provide any detail as to what constitutes available.).

6. With regard to claim 34, Chen discloses acting on the notification information in the second application server module (Chen: Column 22, lines 6-24. As detailed in the

Art Unit: 2444

rejection of claim 1, there is no requirement as to what constitutes the act. Thus, merely processing the message to append the server's own status to be propagated constitutes an act by the second application server module.).

7. With regard to claim 36, Chen discloses repeating the propagation for at least one additional application server module in the system (Chen: Column 22, lines 6-24. The message is passed from node to node until all the nodes in the cluster are accounted for.).

8. With regard to claim 37, Chen discloses a method for synchronizing a system including a plurality of application server modules, comprising:

forwarding a first status information reflecting whether or not at least one application used by the server is available to service user requests on a first application server module to a second application server module, wherein both the first application server module and the second application server module are located on a same tier (Chen: Column 22, lines 6-24. The message at least regards the server's overall availability, which reflects the status of each and every application on the server (e.g. if the server is down, no applications are available. If a server is up, then at least one application on the server is available.);

merging the first status information with a second status information to produce merged information, a non-duplicative union of the first status information and the second status information, wherein the second status information reflects whether or not

Art Unit: 2444

at least one application used by the system is available to service user requests on the second application server module (Chen: Column 22, lines 6-24. The message of the receiving system is appended to the received message, which is then forwarded);

sending the merged information from the second application server module to the first application server module (Chen: Column 22, lines 6-24);

acting on the merged information at the first application server module (Chen: Column 22, lines 6-24. As detailed in the rejection of claim 1, there is no requirement as to what constitutes "acting on the merged information." Merely preparing the information to be forwarded constitutes an act on the information.); and

repeating the forwarding, merging, sending and acting for at least one other application server module (Chen: Column 22, lines 6-24. The action is repeated until the cluster is finished.).

9. With regard to claim 38, Chen discloses that the forwarding of the first status information is prompted by the first application server module becoming active after being inactive (Chen: Column 21, line 63 to Column 22, line 5. Part of the initiation process for the nodes in the cluster is to transmit a heartbeat signal (which would be the first heartbeat after initialization.).

10. With regard to claim 40, Chen discloses a computer readable-memory device comprising computer executable instructions, that when executed, implement the

Art Unit: 2444

method of claim 37 (Chen: Column 22, lines 6-24. The functionality is performed by a computer.).

11. With regard to claim 41, Chen discloses a method of advising a user of the availability of an application in a system including plural application server modules, comprising:

receiving, at an application server module in the system, a user's request for an application (Chen: Column 11, line 60 to Column 12, line 7. A group leader receives a request from a client.);

consulting an application store associated with the application to determine whether the application is unavailable, and, if so generating a response (Chen: Column 11, line 60 to Column 12, line 7. The group leader checks the table, and determines the availability. It then forwards the request to an available server.); and

forwarding the response to the user in response to the received request, wherein the user to whom the response is forwarded is the user who requested the application, and wherein each of the plural server modules in the system maintains its own application store (The claim language, as currently presented, does not necessarily require that a response is generated, as there is no requirement that the application is unavailable. For a reference to anticipate a claim, the reference only needs to teach one embodiment within the scope of the claim. In this case, Chen discloses the embodiment of the instant claim where the service is available. Further, it is noted messages to notify a client of a failed request were well known, and likely amending the

Art Unit: 2444

language to require that the application is unavailable would likely result in a rejection under 35 USC 103(a).).

12. With regard to claim 42, Chen discloses a computer memory device comprising computer-executable instructions that, when executed, implement the steps of claim 41 (Chen: Column 22, lines 6-22. The method is performed using a computer.).

13. With regard to claim 46, the instant claim includes subject matter that is substantially similar to that provided in claims 41 and 31, where the third server functionality is performed by the leader of Chen (Chen: Column: Column 11, line 60 to Column 12, line 7), as detailed in the rejection of claim 41, and the receiving and forwarding of the information performed by the servers in the cluster, where the last forwarding is to the cluster leader (Chen: Column 22, lines 6-24), as detailed in the rejection of claim 31.

14. With regard to claim 47, the instant claim includes subject matter that is substantially to that found in claim 38, and is rejected for substantially similar reasons.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2444

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 32-33, 35, 39, 43-45, and 48-49 rejected under 35 U.S.C. 103(a) as being unpatentable over Chen.

17. With regard to claim 32, Chen discloses the invention as substantially claimed except that acting on the notification information in the first application server comprises:

uploading the notification information into at least one application store associated with at least one respective application provided by the first application server module.

However, Official Notice (see MPEP 2144.03) is taken that the caching of received information was well known in the art.

Accordingly, it would have been obvious to have each node store the information in a cache when the information is received. It is noted that there is no requirement as to what constitutes an "application store," nor is there any functionality performed by the storing. Thus, storing the information in a cache, even if the information is never utilized, still reads on the claim as currently presented.

Accordingly, it would have been obvious to modify Chen by having a cache storing the messages that are received by Chen.

The suggestion/motivation for doing so would have been that by caching messages, if a need arrives subsequently to access the information, the information may be accessed again. In the case of the system of Chen, the information includes information from 1 or more other nodes, meaning that reconstruction of the information

Art Unit: 2444

would require contacting each and every other node to collect the information. Thus, in a situation where a transmission fails, due to, for example, a node coming offline suddenly or a data corruption, rather than reforming all the information, the message may be sent again, either to the same node if it is still online, or to a different adjacent node so that the message may properly be propagated through the network.

18. With regard to claim 33, Chen discloses that the propagating comprises transferring the notification information using a first queue provided by the first application server module to a second queue provided by the second applications server module.

However, Official Notice is taken that buffers for communication interfaces were very well known in the art, where both egress and ingress buffers were well known.

Accordingly, it would have been obvious to modify Chen by having both a transmit buffer and a receive buffer on each node.

The suggestion/motivation for doing so would have been that a transmit buffer allows the node to continue to produce data to be transmitted even if the interface has not yet transmitted the previous data. This is especially useful in situations where the internal processor and the communication bus within the system is faster than the network that the system is connected to, where information can be generated and prepared for transmission faster than the information can be transmitted. Thus, having a queue for transmission allows the system to continue to produce information, and to transmit information without pause, thus maximizing use of whatever bandwidth is

Art Unit: 2444

available to the node. Further, having a receive buffer is useful in situation where a node may be communicating with more than one other node. Thus, a node may be able to process 100 messages per time unit, but has no real cap as to how many messages may be received in the same time unit. By providing a receiving buffer, bursts where more messages than the node can handle through straight processing are transmitted one time unit would not necessarily result in packets being dropped, but rather would have the packets being temporarily stored until the node can process them. Thus, at the time of invention, a person of ordinary skill in the art would have clearly been motivated to provide each node with a input queue (buffer) and an output queue, and have all messages received and transmitted being sent to and from the proper queue.

19. With regard to claim 35, Chen discloses the invention as substantially claimed except that the acting on the notification information in the second applications server module comprises uploading the information into at least one application store associated with at least one respective application provided by the second application server module.

However, Official Notice is taken that the caching of received information was well known in the art.

Accordingly, it would have been obvious to have each node store the information in a cache when the information is received. It is noted that there is no requirement as to what constitutes an "application store," nor is there any functionality performed by the

Art Unit: 2444

storing. Thus, storing the information in a cache, even if the information is never utilized, still reads on the claim as currently presented.

Accordingly, it would have been obvious to modify Chen by having a cache storing the messages that are received by Chen.

The suggestion/motivation for doing so would have been that by caching messages, if a need arrives subsequently to access the information, the information may be accessed again. In the case of the system of Chen, the information includes information from 1 or more other nodes, meaning that reconstruction of the information would require contacting each and every other node to collect the information. Thus, in a situation where a transmission fails, due to, for example, a node coming offline suddenly or a data corruption, rather than reforming all the information, the message may be sent again, either to the same node if it is still online, or to a different adjacent node so that the message may properly be propagated through the network.

20. With regard to claim 39, the instant claim includes subject matter that is substantially similar to that in claims 32 (for the first acting) and 35 (for the repeated acting), and is thus rejected for substantially similar reasons.

21. With regard to claim 43, the instant claim appears to include subject matter that is substantially similar to that presented in claim 32, and is thus rejected for substantially similar reasons. Further, Chen teaches that the notification information comprises an indication of whether or not at least said at least one application is available to service

Art Unit: 2444

user requests (Chen: Column 22, lines 6-24. As detailed above, the information includes information of whether a server is online or not, meaning that the status indicates whether the applications on that server are available or not.).

22. With regard to claim 44, the instant claim includes subject matter that is substantially similar to that presented in claim 33, and is thus rejected for substantially similar reasons.

23. With regard to claim 45, the instant claim includes subject matter that is substantially similar to that presented in claim 36, and is thus rejected for substantially similar reasons.

24. With regard to claim 48, the instant claim includes subject matter that is substantially similar to that presented in claim 35, and is thus rejected for substantially similar reasons.

25. With regard to claim 49, the instant claim includes limitations that are substantially similar to those presented in claim 41, and are rejected for substantially similar reasons. Chen does not disclose expressly logic to forward the response to the user.

However, Official Notice is taken that when a server cannot respond to a request or forward the request to another server to respond the request, it would have been well known to have some sort of error notification transmitted to the user.

Accordingly, it would have been obvious to forward a response indicating that an application is not available in the server cluster of Chen to a user.

The suggestion/motivation for doing so would have been that there are only a finite number of ways to handle a situation where the cluster of Chen cannot respond to a user. First, the request can be held indefinitely until the cluster can respond. Second, the request can be dropped and never responded to. Third, the request can be forwarded to another cluster or entity. Fourth, the request can be responded to with a message indicating the request could not be completed. The problem with the first and second options is that they would both possibly result in the user never having any resolution to the request, and would require some mechanism on the client side to determine that too much time had elapsed. However, this is not good for service to the user, as the user would be unsure if it was a network transmission error, a client error, or a server error. The third possibility may result in the request being fulfilled, but may also result in none of the other known entities being able to respond to the request, which would mean that the third possibility would need a mechanism for handling this situation, such as the first, second, and fourth options. The fourth option, meanwhile, allows user to know that the request was properly received by the server, and lets the user know that the servers, themselves, were not able to respond. Whether this notification includes specific reasons or not does not negate the usefulness of this

Art Unit: 2444

message. However, further information may also be provided, such as error codes, other possible locations to try, etc. Thus, given the finite number of possibilities, a person of ordinary skill in the art would have been motivated to pursue each and every possibility in his or her technical grasp. Further there would have been definite motivation for performing the fourth listed option, as detailed above.

Conclusion

26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Christensen whose telephone number is (571)270-1144. The examiner can normally be reached on Monday through Thursday 6:30AM - 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on (571) 272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2444

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. C./

Examiner, Art Unit 2444

/Hassan Phillips/

Primary Examiner, Art Unit 2451